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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT PAPER NUMBER

2859

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,206

Applicant(s)

DEWAELE, LUC

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 4-6 and 10 are objected to because of the following informalities:

Claims 4-5: the same reference numbers (3,12) are given to different structures, i.e., a component and a guide element.

Claim 4: "a component" in line 2 lacks antecedent basis.

Claim 6: "the temperature differential" in lines 1-2, "the first" in lines 2 and 4 lack antecedent basis.

Claim 10: A) "the guide element" in lines 1-2 lacks antecedent basis,

B) "the first temperature sensor" in lines 2-3 lacks antecedent basis,

C) "the second temperature sensor" in lines 3-4 lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, 7, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita (U.S. 5318077) in view of Cramer et al. (U.S. 6000844) [hereinafter Cramer].

Yamashita states that there is a need to monitor a rapier band's (object) abrasion (wear) by using an electromagnetic energy sensor and deducing the wear data from the measurements. It is inherent, that there is a sensor (first/ second) associated with the rapier band, and thus with all the elements of the rapier band (guide, wheel).

Yamashita does not teach the particular wear monitoring device using a thermal (temperature) energy sensor to determine the wear, with the remaining limitations of claims 1-2, 4-5, 7, 11-12.

Cramer teaches to obtain a thickness defect (wear) data of an object by directly measuring its temperature and making a thermal image of its portions/ elements. Cramer discloses a temperature monitor/ imager (sensor) capable of sensing and video displaying temperature/ thermal image and thus, wear (thickness) of all the portions of the surface of the object. Cramer also teaches to compare data to a previous data and an analysis of the data (col. 9, lines 19-36). Inherently, Cramer is considered to be teaching an analyzer and a comparison device. It is also inherent, that, if said imager is applied to an object having different portions (i.e., rapier band), all the portioned will be monitored.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the wear sensing device disclosed by Yamashita, with the wear (defects) sensing device, as taught by Cramer, because both of them are wear (defects) sensing devices using an electromagnetic energy, which will perform the same function, of sensing the defects of the object of interest, if one is replaced with the other.

With respect to claims 1-2,4-5: the method steps will be met during the normal operation of the device stated above.

4. Claims 1, 3, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of Hobgood and Turek (U.S. 5001925)

Yamashita states that there is a need to monitor a rapier band's (object) abrasion (wear) by using an electromagnetic energy sensor and deducing the wear data from the measurements. It is inherent, that there is a sensor (first/ second) associated with the rapier band, and thus with all the elements of the rapier band (guide, wheel).

Yamashita does not explicitly disclose the limitations of claim 3.

Hobgood teaches to measure a temperature of the device in order to determine its defects/ leaks/ wear.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the wear sensing device disclosed by Yamashita, with the wear (defects) sensing device, as taught by Hobgood, because both of them are direct/ indirect wear (defects) sensing devices using an electromagnetic energy, which will perform the same function, of sensing the defects of the moving object, if one is replaced with the other.

Turek teaches to indirectly measure a temperature of one portion of a device (yarn/ moving member) by positioning a temperature sensor on another portion of the device (guide pin/ guide element) 20, measuring a tension of the yarn/ moving member) guided by said guide, and deducing (indirectly) the temperature of said moving member. Thus, it is considered that Turek teaches to indirectly determine a temperature

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of a moving/ rolling/ winding member by directly measuring the temperature of the guiding element guiding said moving member.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the sensor, disclosed by Yamashita, near/ on the guide element of the device disclosed by Yamashita, so as to measure the wear related temperature of the guide element, and then indirectly deduce the wear related temperature of the moving body (rapier band), as taught by Turek, in order to make it easier for the operator to measure the data of the moving body not disturbing the moving process, and also to make it easier for the operator to replace the sensor if it is damaged, and not stopping the movement of the moving body.

With respect to claim 3: the method steps will be met during the normal operation of the device stated above.

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of Hobgood et al. (U.S. 4336708) [hereinafter Hobgood].

Yamashita states that there is a need to monitor a rapier band's (object) abrasion (wear) by using an electromagnetic energy sensor and deducing the wear data from the measurements. It is inherent, that there is a sensor (first/ second) associated with the rapier band, and thus with all the elements of the rapier band (guide, wheel).

Yamashita does not teach an analyzer, as stated in claim 7, a first and a second temperature sensors connected to the analyzer, as stated in claim 8.

Hobgood discloses a device and teaches to measure a temperature of a surface of an object so as to determine the objects defect / leak (wear) by measuring its temperature, the device comprises wherein a first and a second (contact) temperature sensors are spaced on the object, and connected to a temperature controller/ display/ monitor 28.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add temperature sensors located at different sites to the device, disclosed by Yamashita, so as to measure the temperature of the device and obtain a differential temperature signal from two points with two temperature sensors, as taught by Hobgood, so as to compare the signals, in order to allow the operator to decide if the temperature signal of interest at a predetermined location of the device is within predetermined limits.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an analyzer, as taught by Hobgood, to the device, disclosed by Yamashita, so as to analyze the temperature of the device, in order to allow the user to determine if the surface has a defect (wear) by evaluating the temperature change..

6. Claims 1, 6-7, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of Schmidt et al. (U.S. 5352038) [hereinafter Schmidt].

Yamashita states that there is a need to monitor a rapier band's (object) abrasion (wear) by using an electromagnetic energy sensor and deducing the wear data

from the measurements. It is inherent, that there is a sensor (first/ second) associated with the rapier band, and thus with all the elements of the rapier band (guide, wheel).

Yamashita does not teach using a thermal (temperature) energy sensor to determine the wear, an analyzer/ comparison device and a controller, and determining a temperature differential between a first and a second temperature, as stated in claims 6-7, 11, 12.

Schmidt discloses a defect (wear) sensing device to measure a surface temperature of a surface 4 of a moving object to determine its defects, the device comprising a temperature sensor 1, a comparison device/ analyzer 7 to compare a differential signal between a measured (first site) temperature and a standard (second site) temperature. The analyzer is connected to a controller 9.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the wear sensing device disclosed by Yamashita, with the wear (defects) sensing device, as taught by Schmidt, because both of them are direct/ indirect wear (defects) sensing devices using an electromagnetic energy, which will perform the same function, of sensing the defects of the moving object, if one is replaced with the other.

With respect to claim 6: the method steps will be met during the normal operation of the device stated above.

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7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita and Hobgood as applied to claims 1, 3, 9 above, and further in view of Palti (U.S. 6220570).

Yamashita, Hobgood and Turek disclose the device as stated above in paragraph 4.

They do not explicitly teach a thermally conductive support/ pad / material to receive (contact) a first temperature sensor and a sensor located near the rapier band.

Palti teaches in Fig. 2 a thermally conducting material 24 provided between the surface of interest and a temperature sensor to ensure a better thermal contact.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a thermally conductive material, as taught by Palti, to the device disclosed by Yamashita and Hobgood, so as to allow a better thermal conduction between the object of interest and the temperature sensor, in order to minimize heat loss and improving an accuracy of the device.

Conclusion

9. The prior art made of record and not relied upon considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Verbitsky who can be reached at (703) 306-5473 Monday through Friday 7:30 to 4:00 ET.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-5473.

GKV


Gail Verbitsky, Patent Examiner,
TC 2800

May 23, 2003